

## DISEASES

OF THE

## CHEST

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## Editorial Comment

**AMBULATORY** The use of the above term  
**PNEUMOTHORAX** requires elucidation.

The legitimate lung specialist, when speaking of using ambulatory pneumothorax, means keeping the patient at absolute rest in bed, with pneumothorax treatment of the affected lung, until long after all clinical signs and symptoms of activity of the tuberculous process have subsided; *then, and then only*, does the patient become ambulatory, receiving refills as often as necessary to maintain the necessary amount of collapse of the affected lung.

It is agreed by almost all worthy authorities on the subject that the best place for the period of absolute rest is the climatologically located, well conducted and equipped, modern Tuberculosis Sanatorium; next best the local hospital; and least favorable is bed rest at home.

Charlatans and unscrupulous opportunists known commonly as quacks, frequently take advantage of the lack of knowledge concerning the real meaning of ambulatory pneumothorax, common to many physicians and most of the public, and encourage patients

afflicted with active pulmonary tuberculosis to continue with their work the entire time of treatment. The patients thus treated gain weight and look improved due to lessened absorption of toxins from the affected area in their lungs, but the same forces which brought catastrophe to the first lung are still operating and in a variable length of time, usually within the first couple of years, there is spread to and break-down in the other lung, before the first lung has healed.

The only apparent reason for such handling of a case is that the patient is thus able to continue payments to the unscrupulous physician, which, by proper rest treatment would be interrupted. This view is substantiated by the fact that we seldom see cases who are unable to pay for any treatment handled in such a manner, nor those who are able to pay if they do stop work.

If the medical profession and laity are not informed on this important subject, so that the quack is checked, the most valuable half of the treatment of Pulmonary Tuberculosis, Local Rest of the part containing the tuberculous lesion, will come into disrepute.

F. W. B.

**PHILADELPHIA-PENNSYLVANIA PLAN RECEIVES OFFICIAL STATE ENDORSEMENT IN PENNSYLVANIA** ON Friday, May 13th, 1938, Doctor Edith MacBride - Dexter, the progressive Secretary of Health of the Commonwealth of Pennsylvania, gave unqualified endorsement to the Philadelphia-Pennsylvania Plan.

"May 13, 1938

"Dr. Frank Walton Burge,  
1930 Chestnut Street,  
Philadelphia, Pennsylvania.

"Dear Dr. Burge:

"I heartily approve the Philadelphia, Pennsylvania Plan for Tuberculosis.

"With all good wishes for success, I am

"Sincerely yours,

(signed) *Edith MacBride Dexter*  
Secretary of Health".

"EMD:R

Doctor Dexter has already been foremost in the Nation in Sanatoria Building Program.

#### "Sanatoria Building Program"

"Our three sanatoria at present have a capacity of approximately 2400 beds, and we usually have a waiting list of from 700 to 1000 patients. In order to take care of these, we plan to increase our capacity by thirteen or fourteen hundred beds. This will more than absorb our present waiting list and will provide facilities for the treatment of patients discovered by the new case finding program in which the Department of Health is engaged.

"Our building program under the State Authority includes a new sanatorium in Western Pennsylvania for 500 adult patients and a wing for 50 children suffering from adult type tuberculosis, administrative offices and staff rooms, a dormitory for 100 patient employees—50 men and 50 women—and a dormitory for 100 non-patient employees—50 men and 50 women.

"Hamburg will have four new units which will give an additional 200 beds for patients and also a new home for nurses. Ground was broken for this work on November 22, 1937.

"Mont Alto, where the buildings are antiquated, will have a new children's hospital with a capacity of 325 beds for children who have childhood type tuberculosis; an infirmary for about 500 adult patients; a wing for 75 children who are suffering from adult type tuberculosis; a new kitchen and dining room; a new home for nurses replacing the present buildings; quarters for 75 non-patient men employees and a dormitory for 100 women non-patient employees. Careful studies of modern tuberculosis institutions were made so that every advantage could be taken of new developments in hospital design."

With adoption of the Philadelphia-Pennsylvania Plan, we now have assurance that the facilities thus afforded will give the maximum benefit to the people of small income in the State of Pennsylvania. F. W. B.

**ENTHUSIASTIC TUBERCULIN TESTING** SOME sections of Georgia, including the Atlanta area, have just emerged from a smallpox scare. The usual

hysteria that accompanies such things prevailed. After it was all over, it was shown that there were only eight cases of proved smallpox. The excitement of the general populace at one time reached a feverish pitch, and resulted in a wholesale vaccination of the good citizenry. The doctors' offices, as well as those of the public health agencies, were inundated with the flood of the eager seeking protection from this scourge. They did not have to be solicited; did not have to have the rationale of vaccination presented to them. In other words, they did not have to be sold on the protective value of vaccination. In the hysteria of the outbreak, fanned into flame somewhat by notices in the lay press, they took the initiative and flocked in droves to the medical profession. This was a fine thing, for it resulted in a general vaccination against this dread malady. There were many who did not need it; but on the other hand there were those who did. It was surprising to discover the large number of individuals who had never been vaccinated before. That section of Georgia, therefore, is protected from smallpox for many years to come.

If only there could be some stimulus to

prod the people into similar action with regard to tuberculosis; to make them flock in a similar manner to the doctors for a tuberculin test, chest examination or an x-ray film of their lungs. Except in the densely populous areas, the universal application of the tuberculin test followed by an x-ray examination of the positive reactors would go a long way in the control of this disease. The incidence of positive reactors in the large urban communities is so great, that from an economical point of view the universal application of this procedure would not be practical. It is theoretically and practically sound, however, that everywhere, the people become tuberculosis minded and lend concerted efforts toward its eradication.

Except in an insignificant minority, there is no invasion of the lungs at the time of the primary infection in childhood. There follows a period of latency of several or more years until the teen age, or somewhat later, when involvement of the lungs occurs. Investigation during recent years of the epidemiology of tuberculosis has emphasized this latency, this rather striking period of inaction intervening between early life and the adolescent or young adult age. It has resulted in intensifying the search for tuberculosis between the ages of 15 to 25. The examination of all individuals in this age group would approach accomplishing in tuberculosis what vaccination has accomplished in smallpox. A tuberculin test as a screen, would aid greatly in limiting the extent and cost of such a program. As called to attention by Myers, x-ray films at this time frequently reveal lesions in the lungs one to three years before the advent of symptoms. Who can deny that with our modern methods of treatment this is the time to strike, the time to make a bid for a cure?

While there is no intent, and certainly no desire, to belittle the menace of uncontrolled smallpox, nor fail to laud the almost complete eradication of this horrible disease from our midst; it is to be deplored that a parallel enthusiasm has not been engendered in our anti-tuberculosis campaign. Let it not be forgotten that tuberculosis is the leading cause of death in the most productive period of the life of man-kind.

C. H. H.

#### RED CROSS FIGHTS TUBERCULOSIS ABROAD

In India, with a view to stimulating the interest of its members in the fund which Her Excellency the Marchioness of Linlithgow, Vicereine of India, is endeavouring to raise for a nation-wide campaign against tuberculosis, the Indian Red Cross Society issued a Special Tuberculosis Number of its *Journal* in March-April. This number contained an article on *The Peculiarities of the Tuberculosis Problem in India*, by Major-General Sir Cuthbert Sprawson, Kt., late of the Indian Medical Service; a summary of the proceedings of the Empire Conference on the Care and After-Care of the Tuberculous; resolutions on tuberculosis adopted at the International Rural Hygiene Conference at Bandoeng; and the news of the King George Thanksgiving (Anti-Tuberculosis) Fund.

In a preface to the number, the Editor points out that tuberculosis has increased rapidly in India during the last three decades and that, unless steps are taken to prevent the spread of the disease, it will soon take a predominant place among the causes of death. In this connection, it is interesting to note that a tuberculosis clinic has now been started in Baroda City under the auspices of the Red Cross.

In Greece, the Red Cross Public Health Center in Athens, which is very active in the crusade against tuberculosis, has undertaken during the last few months the vaccination of 10,000 new-born infants and 1,200 older children by means of B. C. G. Serum. The results have proved so satisfactory that the Ministry of Health has requested the Red Cross to organize similar vaccinations in the provinces. The local branches in Salonika, Volo and Canea have already taken the necessary steps to give effect to this request.

In Colombia, the Red Cross, which barely three years ago opened the "Nemesio Camacho" refuge, will shortly be opening an anti-tuberculosis dispensary which will be the pride of Bogota, having cost \$90,000.00. The Society is also working on plans, in collaboration with the Colombian government, for the construction of two hospitals for the treatment and prevention of tuberculosis.

C. M. H.



# ADDRESS of the INCOMING PRESIDENT

## American College of Chest Physicians \*

CHAMP H. HOLMES, M.D., F.A.C.P.

Atlanta, Georgia

AT that time in the future when my head is hoary white (and the mirror tells me the beginnings of that are here); when the stamp of advancing years rests upon my brow; I shall turn back the pages of time to this occasion, and mark with gratitude this day when it became my distinctive privilege to be made president of the now great American College of Chest Physicians. It is a college of which organized medicine boasts, a college to which the nation proudly points and a college from which mankind with a prayer of thanks acknowledges benefaction. A warm sense of satisfaction comes over me in the realization that I was elected to this office during the struggle of our genesis, in the misty dawn of our career. A glowing pride fills me to have seen the mists dissipate and our efforts crowned with the glory of success.

As I sit musing, I see again through the haze of tobacco smoke (whether it is to be the smoke from pure Havana, or that from the more lowly ingredients of a roll-your-own, I suppose the New Deals of the future will determine); but I see again the faces of many of you just as I see them now crystalized into the reality of the present. I recapture that urge, that spirit which caused our early aims and ideals to come to fruition. I see again in passing review a parade of our earlier milestones of progress: the attempt to lend a helping hand to the private sanatorium in its losing battle; the publication of *Diseases of the Chest*, carrying its helpful message to the general practitioners over the land; efforts to further and improve the teaching of chest diseases in our medical schools; the creation of a pneumothorax directory; activity in forming committees within the state and county medical societies to advance the study, treatment and control of tuberculosis and to improve the conditions of both patient and doctor in the sanatoriums; and organized effort



to stimulate interest in, mould legislation for and, in general, promote the status of, diseases of the chest.

Several weeks ago in New York, I heard the incoming president of the American College of Physicians liken that organization to a large ground bird. He did so most attractively and cleverly and with consummate attention to detail. I, however, am inclined to draw briefly my metaphor of this organization in terms of man. At Albuquerque we were born—a lusty sturdy infant, groping, a little confused, not knowing exactly where he was going, but going somewhere. Kansas City saw us a growing, rugged youngster with as yet only a dimly perceived objective—but on his way. At Atlantic City came the full bloom of adolescence. Ideals and ambitions surged in this youth. He began to see the way. Today, in this lovely city of San Francisco, we find ourselves a full grown man—a young man; but one fired with the eagerness, the strength and the determination to pursue his goal. He knows where he is going.

Members of the American College of Chest Physicians, ours is a splendid organization. Our task is great, our future bright! We have accomplished much—much remains! So let us all make a concerted effort to forge onward toward our goal. The pioneering trail we have blazed lies clearly before us and surely leads by an ever widening path to the gleaming white pavement of the open highway just ahead, the highway of our destiny.

In the office of president with which you have honored me, I pledge with all that is best in me, to lead—with a dignity, a zeal and a loftiness of purpose.

\* Delivered at the Fourth Annual Meeting of the American College of Chest Physicians held at San Francisco, June 12, 1938.

## Examination of the Chest

ROBERT B. SANDERSON, M.D., F.A.C.P.

South Bend, Indiana

THE general treatment of any particular disease has a tendency to change as new information is added to what we already know and as procedures, medications, etc. that are of no, or doubtful value are discarded. In other words, our present treatment of any particular disease is the gradual result of the evolution of procedures which at present find themselves among the essential parts of a presumably rational program. A very simple example of this evolution of therapeutics is the disease of diabetes, a condition which in its early history was probably treated by an effort to replace the water and the sugar lost. The rational treatment is sufficiently complicated and, with the introduction of insulin, sufficiently well organized to be considered as having been brought under control. This was accomplished by a series of evolutionary procedures which have become fairly well standardized although they are sufficiently elastic to be applicable to the various individual conditions met with in any particular patient. Much, therefore, has been done in the way of adding to and taking away from our ideas of rational treatment.

No less may be said of the treatment of tuberculosis and the various other chronic pulmonary affections met with almost daily in a fair sized chest clinic. From the program of isolation, rest, and fresh air of the early twentieth century, a procedure or group of procedures which was almost universally prescribed for *all* tuberculous patients, to a series of individual procedures manifested by various forms of collapse therapy, which characterize the present day treatment of tuberculosis, shows that the physicians of the period have found it necessary to add to their armamentarium of therapeutics and to take away from their so-called list of useful procedures. In the process of adding to and taking away, the treatment of tuberculosis has not only evolved into a fairly standardized procedure which also admits of individualization, but has also attempted to extend the usefulness of the therapy to a larger

number of patients. In the last analysis, the test of a satisfactory therapeutic procedure should be: First, that the procedure promises a relatively high prospect of success; and second, that the procedure should be applicable to a relatively high number of patients who have been found to be affected with a certain disease.

The finding of the disease, in other words the diagnosis of the condition and the art and technique of the science of diagnosis, has evolved as rapidly, or perhaps even more so than the treatment; it is our purpose at this time to attempt, if possible, to review briefly the various procedures which have been considered as essential parts of the diagnosis of pulmonary conditions and to point out those that have at this time a rational basis as well as those that may be for the most part relegated to a position of insignificance, if not uselessness.

It was only a short time ago that the medical student was given extended lectures on the technique and science of physical diagnosis, a great amount of which time and study was devoted to the chest. It would be interesting to know the percentage of wasted effort attendant to the didactic method of teaching physical examination of the chest. It perhaps would be unfair to say that nine-tenths of this effort was wasted and yet there is scarcely a medical student who would not admit that his courses on physical diagnosis of the chest were practically useless. Now the fault did not lie particularly with the physician who was teaching and certainly not with the student who was as anxious as any one to obtain the knowledge, develop the science, and learn the art of diagnosis. The fault probably lay, if there was a fault, with the underlying principle of physical diagnosis teaching. That principle was to the effect that physical diagnosis of the chest could be taught, when as a matter of fact, it appears quite certain that such knowledge can only be obtained by doing. Much time was spent in these lectures upon the significance of auscultation, percussion, and palpation; stu-

dents were frequently chided because they were unable to percuss with accuracy the borders of the heart, and while we are discussing that it might be interesting to note that the teacher would percuss the heart with accuracy, while none of his students were able to do the same.

It may be startling, but at the same time encouraging, to know that the present writer has never to his knowledge been able to satisfactorily percuss the borders of a normal heart. And herein lies one of the first facts of the older conception of the diagnosis of pulmonary conditions, and that fact is that many of the conventional methods of physical diagnosis of the chest are of insignificant value and the sooner the physician gets that clearly in mind the more rapidly will he become expert in the diagnosis of pulmonary pathology.

Every one is familiar with the general technique of percussion, but few seem to be familiar with its limitations. So many times it happens that the chest is percussed and when the sounds appear to be relatively normal the conclusion is arrived at that the patient has no pulmonary pathology. The same is true of palpation, of inspection, and of auscultation. It is probably truer of auscultation than of any other part of the examination for the reason that auscultation of the chest has for so many years been looked upon as a satisfactory examination of the chest, but one does not need to examine many chests and follow this procedure with more accurate methods of diagnosis until he finds startling evidence of the fact that even auscultation itself has a tremendous percentage of error. It might be said with a fair degree of accuracy that ninety per cent of the patients with significant pathology in the chest will show significant auscultatory changes. However, a ten per cent mistake in diagnosis of the ordinary chronic pulmonary affections is far too high and for that reason it would seem that auscultation of the chest should be given weight only when it reveals evidence of definite pathology and that its significance in the absence of evidence of pathology should be relegated to a relatively insignificant part of the examination. In other words, the weight of evidence collected by auscultation is heavy when there is evidence of pathology, but light when there is

no evidence of pathology.

What then can we do to increase our percentage of correct diagnoses and at the same time decrease our mistakes? Well, obviously the answer to that is one word and that word is thoroughness. By thoroughness I mean a more complete examination, and I venture to suggest the following procedures as being imperative to a complete examination of the chest: First, x-ray of the chest; second, a history of the patient's condition; third, physical examination of the chest; and fourth, a laboratory examination of the sputum and blood.

If we are to obtain any considerable degree of accuracy in our diagnosis of pulmonary conditions, we must assume the attitude that the patient's chest must be proved to be healthy before we give an opinion to that effect. This procedure necessitates the regular and routine use of those procedures just mentioned.

It is not my purpose to go into detail concerning the indications for these examinations, since it is assumed that each of these examinations is indicated in each and every new patient that comes to us and certainly should be repeated at intervals of at least one year from then on as long as the patient lives. Many times we are reminded in the course of the re-examination of patients that we neglected to do something which was extremely important. After years of observation we discover sputums that are positive and many times after long periods we discover from x-ray examinations that the pathology has extended markedly, when neither the symptoms nor the physical examinations suggested such changes.

I am aware of the fact that the reader will immediately conclude that the expense of such examinations is so great that they can not be routinely performed. To this argument I would suggest that the expense of removing an appendix is something which many people can not afford. Yet there are no cases of acute appendicitis that can not be operated upon immediately, if the facilities are available, regardless of the patient's financial condition.

If at present, the usual laboratory procedures are too expensive for general application then it is one of our responsibilities to make these examinations available as well as more



general.

There is a tremendous amount of controversy with respect to the part of the examination which should be performed first. It would seem that that part of the examination should be performed first which promises the highest degree of accuracy and the greatest amount of information in the least time and at the least expense. Now it so happens that all of these conditions do not fit into one single picture, in as much as that part of the examination which promises the greatest information and has about it the highest degree of accuracy in diagnosis is not the least expensive. I refer particularly to the x-ray. Yet when the patient's time as well as the time of the physician, the anxiety concerning the possibilities of error, the possibility of delayed diagnosis, etc. are taken into consideration, it would seem that the first and most important thing which we can do in examining a patient is to take an x-ray, single film, of the chest; and it certainly is a fact that no patient whose chest is being examined should be either diagnosed or treated unless the physician is thoroughly familiar with the x-ray appearance of the chest. Varying degrees of thoroughness will suffice to satisfy the physician that he is sufficiently familiar with this part of the examination for him to continue his treatment, but only a small amount of experience is necessary in both fluoroscopic and x-ray

examinations of the chest for us to find that the re-examinations of patients impresses us with the fact that unless our information is relatively recent it is very likely to be greatly in error. I am reminded of a typical example of a patient, which will be referred to briefly. A woman was operated on in a well known hospital for some pelvic pathology. Two or three days later she developed symptoms of pulmonary pathology which was diagnosed on physical examination as a pleural effusion. The clinician decided to aspirate the chest. One of our assistants recommended that the chest be x-rayed and if possible fluoroscoped, before any attempt was made at aspiration, and he suggested as an argument the thought that the fluid, if present, could be more accurately located. This advice, however, was not followed and several attempts were made to aspirate without success after which (the next day) the patient was an example of the clinical investigation of pulmonary conditions. All of the indications were present for x-ray and fluoroscopic examination before the aspirations were attempted.

The clinicians who are treating tuberculosis have recently developed a slogan which refers to the parenchymal excavations called cavities. This slogan is: "Close That Cavity!" And may we suggest for the clinician who is interested in diagnosis the slogan: "Examine That Chest!"

## The Use of Postural Drainage in Suppurative Lung Conditions

PAUL M. HOLMES, M.D., F.A.C.P.  
Toledo, Ohio

POSTURAL drainage for lung suppurations is not being used as often, correctly, or as persistently as its merit deserves. The purpose of this article is to add my experience to an already voluminous literature extolling the value of this very old but effective therapeutic procedure. There are two possible reasons for the neglect in recent years to use gravity drainage: first, its simplicity, and second, the perfection of surgical and medical methods that promise quicker and more dramatic results. The attention of the medi-

cal adviser has been drawn away from the simpler medical measures and focused upon bronchoscopy, phrenicotomy, artificial pneumothorax, pneumo-peritoneum, lobectomy, surgical drainage, and thoracoplasty. My purpose is not to disparage the use of these latter procedures when indicated, but to urge the conscientious use of gravity drainage as a first method of attack. Many patients may be saved from surgery by the proper use of postural drainage. When one has seen case after case of a variety of suppurative lung

lesions completely recover after the application of gravity drainage alone, a sensible enthusiasm for the method is bound to follow.

I have used gravity drainage with varying degrees of success in four main types of lung suppurations: (1) lung abscess, (2) bronchiectasis, (3) tuberculosis, and (4) empyema with broncho-pleural fistula.

Success in this form of therapy requires free drainage from the lesion into a main bronchus and is greatly enhanced when the lesion is located in the lower two-thirds of the lung. Abscesses and bronchiectasis of the apices have, in my experience, proven intractable, in spite of the fact that it appears simpler mechanically to get good drainage from the apices than from the bases of the lungs. Therefore, unless these apical lesions respond promptly, I move on to more radical measures. Basal lung abscess with free bronchial drainage clears up rapidly, but the higher the abscess or other suppuration, the less responsive it is to conservative treatment.

Many cases of bronchiectasis, if not too chronic and far advanced, make a complete recovery if postural drainage is used carefully and correctly over a long period of time. Failures are due to the dilatory and too brief use of drainage. Even the most advanced cases are improved by the daily evacuation of foul sputum.

In a few instances, I have used the method as an adjunct to surgical drainage of empyema cavities where there has been a broncho-pleural fistula. This has relieved the cough, increased the total amount of drainage, and hastened the recovery of the patient.

In tuberculosis, gravity drainage can assist in clearing the bronchial passages of sputum, thereby concentrating coughing to a relatively brief period. Often, when basal thick-walled cavities near the hilus are resistant to all collapse therapy measures, postural drainage for two hours daily will assist in their closure.

One must not be too timid in the selection of patients for postural drainage. Some of the most dramatic results in my experience have been on patients that appeared too sick to tolerate any manipulation whatsoever. They certainly were poor surgical risks and I merely used gravity drainage as a method of last resort. The aged and the arteriosclerotic do not tolerate the head down position,

yet a moderate drainage position may bring surprisingly good results. Patients who expectorate blood before or after institution of drainage may be continued if bleeding is sporadic and does not increase.

The technique consists in having the patient placed in a position that will permit drainage of the affected area by gravity. If the lesion is located at the base, the patient is instructed to hang over the edge of the bed for five minutes several times the first day, with the thorax as nearly perpendicular as possible. Each day the time is increased by several minutes, according to individual tolerance, until three or four hours daily are spent in the perpendicular position. After the patient becomes accustomed to the inverted position, the drainages may be consolidated into two, but not more than three, daily periods of from one to two hours each. If the last drainage is taken just before bedtime, it will not be necessary to elevate the foot or head of the bed for night drainage. In fact, I think any attempt to get drainage upon a sleeping patient is not only unnecessary, but dangerous, as infection may be carried to a sound lung. The patient should be trained to sleep, if possible, upon the back, abdomen, or the affected side. If the two main bronchi can be kept on the same horizontal plane, chances of infecting the contra-lateral lung will be greatly decreased. Adequately controlled drainage during the waking hours is sufficient.

For chronic lesions, such as bronchiectasis, the drainage bed or "trough" that can be raised and lowered mechanically is advisable, especially for children. There are many inexpensive beds and frames in use that can not only be raised and lowered, but tilted from side to side, facilitating drainage from any part of the lung. Several years ago Doctor Alex Forster kindly loaned me the blue prints of an inexpensive frame he had devised for postural drainage. I have had several of these frames made for the use of chronic suppurations. Recently a young woman visited me with her husband and two fine children, who as a young girl had spent a considerable part of three years on one of these frames draining her bronchiectasis cavities. She has been without symptoms for seven years.

The following cases are chosen to illustrate technique and results:



*Case I:* Mrs. I. R., druggist's wife of 45, had been taking "pelvic treatments" consisting of tamponades, cervical dilatations, and leg exercises for four months during the summer of 1933. In October, while still taking these treatments, she developed a pain at the base of her right lung accompanied by a high fever, exhaustion, and some cough. I saw her in the latter part of November and found a large abscess in the lower right lobe. There was good drainage of a foul, thick sputum; the patient was extremely ill and very emaciated; her pulse was 138, temperature 104, and respiration 40. Due to the critical condition of the patient, postural drainage was advised as being the only method of treatment that could be used with reasonable safety. She was placed crosswise upon a double bed with the trunk hanging down for two minute periods every hour during the first day. The time was gradually increased, until in two weeks, she was draining for thirty minutes every four hours. She was encouraged to cough while in the drainage position. In a few days her general condition began to improve as evidenced by a fall in temperature, pulse, and respiration. As much as 750 cc. of thick sputum was drained daily. At the end of one month, the sputum had disappeared and along with it all symptoms of toxemia. She made a complete recovery and has stayed well for the last four years. Recent x-ray pictures showed both lung fields to be clear. This abscess was of embolic origin. Certainly surgical or bronchoscopic drainage was out of the question.

*Case II:* C. K., female, a factory worker of 26, with an abscess in the left lower lobe of two months' duration, was scheduled for surgical drainage. The surgeon was induced to give postural drainage a try, even though bronchial drainage was not satisfactory. The patient was able to start off with fifteen minute periods and after the third day she said "something broke loose" and a great quantity of sputum "rushed out." In two weeks the cough and sputum had ceased and in three weeks the x-ray showed that the abscess had disappeared completely. That was three years ago and there has been no recurrence.

*Case III:* H. K., male, age 32, had penu-

monia in the winter of 1935 followed by a right-sided empyema with broncho-pleural fistula. After a wait of a few weeks, surgical drainage was instituted with a fair amount of drainage. Cough with considerable sputum was also present. The improvement was so slow and the patient's condition so critical that postural drainage was suggested as a possible aid. Gravity drainage was started cautiously and gradually increased. The amount of drainage by mouth was 300 to 600 cc. daily and in a short time the condition of the patient began to improve, recovery occurring in six weeks with complete closure of the broncho-pleural fistula. There has been no recurrence.

*Case IV:* L. K., female, age 23, bronchiectasis of the right base for eight years, was raising large amounts of sputum which was occasionally blood streaked, extreme clubbing of fingers and toes was present, and she was very much under weight. Phrenicotomy and artificial pneumothorax had been tried without success. Postural drainage was started on ten minute periods every four hours and gradually increased up to three hours daily; no night drainage was used. In one month the cough and sputum had decreased fifty per cent and at the end of six months both had practically disappeared. The general condition of the patient improved and the fingers and toes appeared normal. Three years have passed and while thirty minute drainages are kept up morning and night as a matter of prevention, there is no cough and very little sputum and that principally in the morning.

#### Conclusions

I. Postural drainage is an effective method of emptying suppurative lesions, particularly those located in the lower lobes.

II. The patient should be placed in the drainage position during the daytime and encouraged to sleep on the back, abdomen, or on the affected side, thus preventing the direct contamination of the sound lung.

III. The position and time advised should be based upon the location of the lesion and the age and general condition of the patient. Enough time must be used to allow thick, heavy secretion to be completely evacuated.

# A Review of Two Hundred Cases of Pulmonary Tuberculosis Treated by Collapse Therapy

HENRY BARENBLATT, M.D.\*

Browns Mills, New Jersey

THE two hundred cases herein reported were selected for collapse therapy from five hundred admissions to Deborah Sanatorium during the past five years. They are composed of patients of the white race, male and female in about equal proportions, between the ages of fifteen and fifty-five.

The various recognized forms of collapse therapy were utilized in accordance with accepted indications. Artificial pneumothorax either as the sole procedure, or supplemented by pneumolysis or oleothorax or both predominated in the vast majority of the cases. Temporary phrenic interruption, with or without scalenotomy, was offered to the patient only when the cavity was small or moderate in size and surrounded by lung tissue more or less free of disease.

About 88 per cent of the patients (Table I) were admitted with far advanced disease. In seven instances of minimal pathology, collapse therapy became necessary because of the development of cavitation while the patients were receiving bed rest treatment. In eight other cases pneumothorax was induced in the absence of cavitation because of progression of the infiltrative process (Table II).

Table I.—Stage of the Disease

Minimal .....	7
Moderately Advanced .....	18
Far Advanced .....	175

Table II.—Location of Cavities and Extent of Disease

	Unilateral	Bilateral
Apex .....	18	3
Upper Lobe .....	102	44
Middle Lobe .....	..	6
Lower Lobe .....	6	3
Perihilar .....	3	..
	Apex	upper lobe
Diffuse Infiltration .....	7	8

\* Medical Superintendent, Deborah Sanatorium, Browns Mills, New Jersey.

By reference to table II, it can be seen that unilateral tuberculosis was encountered in 136 patients, while in 64 others the disease was bilateral. As was to be expected, the greatest majority of the cavities were situated in the upper lobes.

Artificial pneumothorax was the method of choice in all cases; the other procedures being supplemented or substituted only when closure of the cavity was not achieved by the former. The clinical and anatomical results are shown in table III-A.

Table III-A.—Clinical and Anatomical Results in Pneumothorax Group

	Unilateral—182	Bilateral—18
Effective .....	93	12**
Ineffective .....	88	6
Sputum Negative .....	93	12
Quiescent .....	9	..
Apparently Arrested .....	84	12
Dead .....	1*	0

\*The death in this case was due to pleural shock.

\*\*In 2 cases the collapse of the lung contralateral to the pneumothorax was made effective by a phrenic in one, while in the other thoracoplasty was substituted.

Of the 88 unilateral and of the 6 bilateral cases in which a satisfactory pneumothorax could not be established, either because of the lack of a free pleural space or because of widespread adhesions, 36 were referred to surgery. Table III-B and III-C show the results obtained by phrenic interruption and thoracoplasty respectively.

Table III-B.—Results in 24 Cases of Phrenic Interruption

Cavities Closed .....	11*
Cavities Open .....	13
Sputum Negative .....	11
Apparently Arrested .....	11

\*In one case a scalenotomy was added to the phrenic.

Table III-C.—Results in 12 Patients Subjected to Thoracoplasty

Cavities Closed .....	9
Cavities Open .....	1
Sputum Negative .....	9
Apparently Arrested .....	9
Dead .....	2*

\*Both deaths were post operative.

By comparison, it might be interesting to know what happened to the 74 remaining patients of this latter group in whom collapse therapy of one type or another could not be utilized. This is revealed in Table IV.

Table IV.—Fate of 74 Patients in whom Collapse Therapy could not be Utilized

Apparently Arrested .....	14
Quiescent .....	12
Improved .....	19
Unimproved .....	27
Dead .....	2

The complications encountered have been surprisingly few. Pleural embolism or shock and adhesions have already been mentioned. As for pleural effusion and empyema one may consult Table V, which is self explanatory. Superimposed spontaneous pneumothorax occurred in 4 patients, all of whom responded favorably to aspiration.

Table V.—Complications—Pleural Effusion

Total Number ..... 31

Slight — 14.

Absorbed — 4.

Not Absorbed — 10.

Moderate — 9.

Absorbed — 5.

Not Absorbed, had to be tapped — 4.

Massive — 3.

Absorbed after tapping — 3.

Empyema — 5.

After spontaneous — 2, both absorbed after tapping.

After a thoracoplasty — 1, still being tapped.

After massive pleural effusion — 2, absorbed after tapping.

### SUMMARY

1. A group of two hundred cases was studied.
2. These included unilateral and bilateral cases.
3. Various forms of collapse therapy were applied.
4. Results and complications are enumerated in the various tables.

## X-Ray - Sputum - and Pneumothorax\*

LAWRENCE SCHLENKER, M.D.  
St. Louis, Missouri

"A COUNTRY doctor needs more brains to do his work passably than the fifty greatest industrialists in the world require," writes Walter B. Pitkin, and this, you will agree, holds for the general practitioner anywhere; his difficulties increase with each issue of the calendar. To make these problems somewhat less in number, the paragraphs that follow have been set down for pulmonary tuberculosis, a sickness still the commonest of all diseases in those between the ages of 15 and 30. If one further adds to the last

statement the opinion that tuberculosis is also the most curable of the chronic diseases, a review of its diagnosis and treatment in a time when it is curable, is all the more in order.

It has become a conviction that, above all other things the best asset the tuberculous patient can have is a disease confined to one lung and that, a lung not adherent to the chest wall. With few exceptions, there must have been a time in the life of every victim of tuberculosis when pneumothorax could have been used effectively. With the passing of that time tragedy walked in on the patient and his doctor. It is equally evident

\* Read before the St. Louis Medical Society at its regular meeting, March 1, 1938.



that had the comparatively innocent procedure of pneumothorax been thought of in time, the much more hazardous operation of thoracoplasty would have been called for less often. With this before us, and for the sake of effectiveness, but three subjects will be spoken of: x-ray examination of the chest, examination of the sputum, and pneumothorax treatment.

Any cough lasting more than three weeks, the spitting of blood, or the occurrence of an acute pleurisy calls for an x-ray picture of the patient's chest. There can be no temporizing with this rule. To depend upon symptoms and signs is living in a realm of false security often fatal, for early tuberculosis has indifferent symptoms and no characteristic signs. When rales are present the case is already advanced. A roentgenologist is within reachable distance of practically every person, and he will give your patient the benefit of his services at a cost which can be met, if you lay your case before him. In most municipalities and counties, x-ray examinations are furnished free to the indigent sick when the attending physician requests it, and the single film, properly taken, is sufficient for ordinary diagnostic purposes. Cost then, is no valid excuse for neglecting this necessary procedure. As the material part of the picture is its interpretation, it seems superfluous to stress here that analysis of the film should come from one who has had much experience in the work.

In rank equal to the x-ray stands examination of the sputum; they go together: the sputum establishing the diagnosis, the film showing the extent of disease. A container for collecting the sputum should be given the patient on his first visit. (Containers are furnished without charge by all laboratories). That sputum first brought up in the morning will most likely show the bacilli, and tubercle bacilli in the sputum means the person has tuberculosis. Should the first report be negative, have it examined again, and again, until at least six examinations have been made; one negative examination is altogether inadequate<sup>1</sup>. Thin or scant sputum

should first be concentrated. Unless the practitioner has the ability to unquestionably recognize tubercle bacilli, he had best leave these examinations to the laboratory, remembering, that a laboratory report is only as good as the man who made it. Private laboratories are found in all large centers, for those who desire privacy. Municipal and state health departments everywhere do this work free of charge.

Having made his diagnosis, a definite responsibility now rests on the attending physician as to the treatment planned, and he would do well by promptly calling in one who has a wide knowledge in the employment of pneumothorax treatment to determine the possibility of giving this particular patient the advantages it offers. To set down here the expanding list of the indications and contraindications for pneumothorax would result in nothing but confusion and error. Of all factors the individual one decides the question, which even then may be doubtful. To say the disease must be strictly limited to one lung, as was taught a few years ago, would be altogether misleading to-day and would deprive some patients of its use, whose life it might save. This much may also be added, to carry out the treatment only a pneumotherapist should be employed, for no one without this training should attempt to put gas into the pleural cavity; a needle in the wrong place has many times spelled sudden death. In the hands of those who know and anticipate every possibility, pneumothorax is entirely free of danger.

The outstanding achievement, to my mind, of this discovery of Forlanini's is that the patient made well by pneumothorax stays well. This is a comforting assurance to the doctor who in former years had to witness, often, the discouragement and heartbreaks of the patient who after a year or two of faithful bed-rest, would break down utterly under the ravages of influenza, a hemorrhage, or some similar disaster; symptomatically he was well, anatomically he could not have been. In 1928, H. Longstreet Taylor opened his presidential address with, "The relapsing character of pulmonary tuberculosis in cases that have been discharged from treatment is both realized and feared by the medical profession." Today, appreciating and utilizing

<sup>1</sup> Schlenker, Lawrence: The Importance of Repeated Examination of the Sputum and of the use of the Antiformin Method, *Journal of the Mo. State Med. Assoc.*, 22:216-218 (June) 1925.

pneumothorax better, we know there is at hand a means for applying exact, controlled pressure upon the ulcerated tissues, the cavities, and the blood and lymph vessels in the diseased lung. This is the logical way for bringing about anatomical or permanent cure. Through this procedure, probably the greatest discovery in the field of curative medicine, more can be accomplished in clearing up the toxemia of tuberculosis in a few weeks than the bed did in months or even years. Fever, sweats, rapid pulse, loss of appetite and malaise soon disappear. At the same time there is steadily being removed from the body a focus of infection of a most serious kind, a mine charged with high explosives, ready on any pretext to flood the opposite lung or other organs with bacilli.

On turning next, to one of the difficult sides of the *behandlung* of a case of tuberculosis, the economic one, there is at once seen the great saving in time and money through the use of pneumothorax. To the average patient this is of tremendous importance, for it often decides the difference between getting actually well and remaining an intermittent invalid as long as he lives. For in taking the patient before long-continued illness has bankrupted his vitality, a satisfactory pneumothorax can cut the duration of his work-disability down to three or six months, compared to the one or more years required by bed-rest. This being known at the start, the employee is encouraged to ask for a definite leave of absence, whereby he can often induce the employer to hold his job open for him. Thus, though continuing under treatment, the breadwinner again takes up his work, the woman marries and perhaps bears children, and the youth resumes his studies towards a career, all leading normal, successful lives. To the pregnant tuberculous woman, pneumothorax has been life-saving, and to the diabetic likewise. Let us then ask, can any other treatment show such complete cure, or any approach to it, in so short a time and at so trivial a cost?

So far, what has been said, concerned only the individual himself. There was no mention of that highly important matter, the public health, which expresses itself here as preventive medicine. It must be obvious to all, that any comprehensive measure which con-

verts the carriers of tubercle bacilli into safe members of the community is important. But it also is unfortunately true, that few of us realize the actual and far-reaching effects upon the common health of a medical measure which can and is performing this miracle. That tuberculosis is declining in both volume and virulence, those in daily contact with the disease will attest. What has brought this decline about, may be divided in uncertain ratio between an increase in the partial immunity to tuberculosis, developed in the civilized white race, and an increase in the use of pneumothorax as a treatment for the disease. At least it is unquestionable, that as the spreaders of infection have been removed, tuberculosis has been proportionately controlled. The patient who no longer expectorates bacilli is of no more danger to his family and associates than is the non-tuberculous one. To the tax-payer, a cure for tuberculosis which can be carried out in the home must be of lively interest, when he learns that every patient in his public sanatoria costs him in the neighborhood of \$1000 a year. And at that, no community has been able to anywhere near catch up with the disease in furnishing hospital beds for its tuberculous citizens. The city of St. Louis, a fair type of all municipalities, has but 884 beds for its 10,000 active cases. Consequently, when more than 90 per cent of a problem must be settled in the home, it is surely a home problem.

### Conclusion

In the cure and prevention of pulmonary tuberculosis, pneumothorax treatment has become the really effective weapon, but how well this will be used rests with the family physician, depending upon how early he detects the disease in his patients. His most practical instruments in doing this are the roentgen picture and the examination of the sputum, two measures he should employ early and often, for they are accessible to every practitioner and obtainable by every patient. His final responsibility lies in determining the possibility of employing pneumothorax as the treatment. By so simple and practical a procedure tuberculosis is placed among the perfectly curable diseases and its eradication practically assured.

## DISCUSSION

*Dr. Andrew C. Henske:*

I have enjoyed listening to Dr. Schlenker's paper. I believe there is no physician in this audience tonight, who is not in full accord with the essayist's views on the importance of early diagnosis in its bearing on the successful treatment of pulmonary tuberculosis.

With the exception of cancer, there is probably no disease where successful treatment is so dependent on the degree with which an early diagnosis is made. Failure to make an early diagnosis is often fraught with grave consequences to the individual suffering with this disease and to a serious economic loss to society as a whole.

It is a well established fact that pulmonary tuberculosis, when unrecognized and improperly treated, may develop from an early lesion to one far advanced within a period of three to six months from the time of its onset. On the other hand, an early case when immediately given proper treatment can become a quiescent case within the same period of time, and the patient be permitted to resume his or her occupation provided it is not one of heavy manual labor.

An analysis of the admissions to Mt. St. Rose Hospital during the calendar year of 1937 reveals some interesting facts. During this period there were admitted to the hospital 215 patients. Of this number there were 19 who were non-tuberculous, admitted for diagnosis and observation. The remaining 196 were all tuberculous and came under the following classification:

Minimal A-4 )  
 Minimal B-10) —14 or 7.1%  
 Moderately advanced A-0)  
 Moderately advanced B-60) 62 or  
 Moderately advanced C-2) 31.6%  
 Far advanced A-3)  
 Far advanced B-50)  
 Far advanced C-61) 114 or 58.1%  
 Millary 1  
 Terminating —6) or 3.2%

It is evident from the foregoing that by far the greatest percentage of our admissions come under the heading of "Far Advanced" or so-called "Third Stage," namely, 114 or 58.1 per cent. In the Minimal or first stage,

there were only 14 or 7.1 per cent. These figures tend to show that at least at our institution, very few patients are admitted who come within the classification of Minimal Tuberculosis, the very class from which we expect, under suitable treatment, to obtain the best results with the least amount of impairment.

I am fully convinced that these statistics are in no way different from the statistics that one could gather at Robert Koch Hospital or at the Missouri State Sanatorium. Formerly the State Sanatorium only admitted early cases and always had many available beds. Several years ago the bars were let down and all stages of the disease, except terminating cases, were permitted to enter. The result has been that there is today a long waiting list of those who are clamoring for admission. This holds true for Koch Hospital and also for Mt. St. Rose. They both have a long waiting list.

When we realize, as Dr. Schlenker has so clearly pointed out, that the most favorable time for the employment of our most valuable method of treatment, namely, artificial pneumothorax, is only conducive of the best results when the disease is relatively in an early stage, then we can realize how futile our efforts are when cases first begin to receive suitable treatment when they are already too far gone.

The average stay of an early case at our institution is not over six months. The average stay of a moderate or far advanced case ranges from six months to at least three years or more. From this one can easily conclude why there is a constant clamor by our state and city authorities for more beds to take care of our tuberculosis problem. This condition would be almost reversed if early diagnosis were the routine procedure.

Statisticians tell us that tuberculosis is on the decline. Yet, today we have more hospital beds available for this disease than ever before and our waiting lists are longer than ever before.

What is the explanation for this state of affairs? The answer, unless I am wrong, probably lies in the fact that the individual physician who first sees these early cases, fails to make an early diagnosis, and even when an early diagnosis is made, fails in his



duty to see that proper treatment is instituted.

The National Tuberculosis Association, for over a quarter of a century, has been carrying on a campaign of educating the public. From the public standpoint, this campaign has been successful and has borne fruit. Today, every high school student knows that early diagnosis is the key-stone to the treatment and that rest, fresh air and diet are the methods employed to bring about a cure.

The physician in the field, however, is still the stumbling block, and this has been repeatedly shown by an analysis of case histories of patients admitted in the advanced stage to our Sanatorium.

Unless, as Dr. Schlenker has clearly pointed out, the general practitioner takes proper advantage of the diagnostic laboratory aids that are at his command, this problem can never be solved.

*Dr. Louis C. Boisliniere:*

I know of no one engaged in chest work in St. Louis who has had a greater experience in artificial pneumothorax than Dr. Schlenker, who has done thousands and thousands of "initials" and "refills".

The introduction of artificial pneumothorax by Forlanini was epical. The medical profession in St. Louis and especially the staff at Mt. St. Rose are under a deep debt of gratitude to Dr. Albert Taussig, who was the first to introduce this beneficent procedure to the profession in St. Louis on his return from Europe approximately 25 years ago. He kindly came down to Mt. St. Rose regularly for a period of a number of months and demonstrated it to us. Since that time it has been performed there in ever-increasing numbers. It was some years, however, before it was taken up by the other phthisiologists in our city, due to the natural conservatism in medicine. It has now become so universal a procedure that every medical graduate should be given a fair knowledge of this procedure.

Artificial pneumothorax is not so simple a procedure as one might be led to believe. It has many hazards, which, however, can be reduced to a minimum only by most meticulous care. Therefore, no one should attempt a pneumothorax, unless in a case of emergency, who has not had some training in the

performance of it. A certain Frenchman stated that he never gave a pneumothorax without having in mind the possibility of having a mortality on the table. These mortalities will occur unless every detail of the procedure is carried out in a most precise way, and even then it may occur. At Mt. St. Rose we have had three deaths in the last 25 years among thirty or forty thousand cases. These deaths were all due to air embolism. There are many other minor hazards which experience, in many instances, teaches us how to avoid. "We should all profit by the hints of every new experience."

We must not forget that in many cases the disease may become arrested without the use of artificial pneumothorax. This is evidenced by the fact that most of our greatest phthisiologists now over 45 or 50 years of age are still actively engaged in their work. Artificial pneumothorax has been generally adopted only for about the past fifteen years. Thanks to Dr. Taussig, we were fortunate enough to institute it approximately 25 years ago.

Many cases of active tuberculosis, even with small cavity formation, especially if the lesion is apical, may arrive at a state of arrestment and the small cavities closed by Nature's emplacement of contracting cicatricial tissue, on absolute bed rest and medical supervision.

However, I do not believe in delay. As soon as we are satisfied that the patient has not got this capability and the sputum remains positive and the stethacoustic signs are those of definite activity, an artificial pneumothorax should be instituted.

Although we may think that a patient may get well under Sanatorium treatment alone, nevertheless, the institution of pneumothorax will greatly shorten his stay in the Sanatorium. Therefore, it is justifiable for economic reasons alone to introduce this procedure just as soon as it is indicated.

*Dr. Schlenker, closing:*

To thank Dr. Henske for his interesting statistics is my first pleasure; they should convince us that tuberculosis is still far from being diagnosed and treated early enough. To disagree with Dr. Boisliniere, with his wide experience and fine judgment, would be bor-

dering on heresy; he but inserts the words of calm judgment, which is very proper. What Dr. Boisliniere thinks of the early, active treatment of tuberculosis is shown by the figures from the institution of which he is medical director, Mt. St. Rose Sanatorium; five years ago only 15 per cent of the patients were receiving pneumothorax treatment, to-day 45 per cent are under some form of collapse therapy. What I am anxious to say is that we are only too prone to let the patient go too long without instituting some active and really effective treatment, through which

the patient may lose his every chance for getting well. We are too easily fooled by appearance and symptoms in tuberculosis. By keeping the patient in bed over a prolonged time he may get fat and look well, and even lose his cough and temperature, but who can tell how completely his lungs are healed out? All that I can say is that I have never been sorry for instituting pneumothorax in any patient it has been given to, but have many times regretted, in seeing the patient some years later, not having spoken more strongly for its use in the beginning.

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## Amoebic Abscess of the Lung Complicated by Cerebral Abscess—Report of a Case\*

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INVASION of the lung by entamoeba histolytica without liver disease is not common, yet secondary involvement of other organs is even less frequent. According to Armitage<sup>1</sup>, amoebic abscess of the brain has been reported in 48 patients, occurring mainly in Egypt. Ochsner and DeBakey<sup>2</sup>, in an excellent review, found that pleuro-pulmonary suppuration followed amoebic infestation in approximately 15 per cent of all cases, more than 14 per cent of which were hematogenous in origin without concomitant liver infection. The rarity of pulmonary lesions with no hepatic affection is recognized when one considers that these occur in less than 3 per cent of all recorded cases of amoebiasis. These authors do not mention the occurrence of metastatic abscess of the brain following pulmonary amoebic abscess, and for that reason the case here presented may be of interest.

*Case Report:* A Grecian male, age 37, presented himself at the Jefferson Medical College Hospital. His history stated that six months previous, while in his native country, he had contracted a dysentery. Although apparently recovered, he later developed chest symptoms enroute to America. On his entry to this country the patient was immediately

hospitalized for six weeks and a diagnosis was made of (1) lobar pneumonia, (2) amoebiasis, (3) amoebic hepatitis. Approximately two months after his discharge, the man was admitted to the Jefferson Hospital medical wards, complaining of left-sided chest and back pain, cough and bloody expectoration of two weeks duration.

At this time bloody expectoration, temperature of 38.5°C. (101.4°F), moderate leukocytosis, and physical and roentgen evidence of consolidation in the upper half of the left chest supported a diagnosis of pneumonia. During the next ten days, the temperature ran an intermittent course, and roentgen examinations showed an abscess cavity in the posterior portion of the upper lobe of the left lung (Fig. 1, page 21).

The patient was then transferred to the bronchoscopic service; remarkably little pus could be aspirated from the left upper lobe bronchus by frequent bronchoscopic drainages. Subsequently the pulmonary abscess increased in size and the amount of "chocolate sauce" pus became profuse. At no time after the initial examination was a leukocytosis recorded, but the number of erythrocytes dropped consistently, necessitating the use of several blood transfusions. Blood chemical and serological findings were not notable. Vegetative and cystic forms of entamoeba

\* From the Bronchoscopic Clinic, Jefferson Medical College Hospital, Philadelphia, Pennsylvania.

histolytica were recovered from the sputum and watery stools on numerous occasions.

Emetine treatment was instituted on the 92nd day of the disease and the formerly irregular fever promptly dropped to normal. The marked improvement in the patient's general condition continued until the 138th day when he suddenly developed a convulsive seizure with a rise of temperature, followed by complete motor palsy of the left face, arm and leg. Roentgen, eye ground and cerebrospinal fluid examinations were negative. The tentative neurological diagnosis was an abscess in the right motor cortex with meningeal involvement. The patient's condition progressively became worse, and the onset of coma presaged death five days later.

At the autopsy, multiple scarring was observed in the cecum and colon, but no active amoebic lesions could be demonstrated. The upper lobe of the left lung was the seat of an abscess measuring 3 cm. in diameter and containing dark brown pus. Chief interest centered on the brain, weighing 1650 grams, and measuring 19x16x9 cm. Located in the left cerebral hemisphere at the junction of

the frontal and parietal lobes near the midline was a pointing abscess, 3 cm. in diameter. The main pathologic diagnosis was acute pulmonary abscess, amoebic; cerebral abscess, amoebic; and multiple cicatrices of the cecum and colon, amoebic.

### Summary

A case of amoebic abscess of the lung of hematogenous origin followed by an acute brain abscess is reported. Clinical and roentgen evidence indicated that by the use of repeated bronchoscopic drainages and emetine therapy the lung lesion was healing satisfactorily; the onset of cerebral metastasis was sudden and caused rapid termination of the patient's life. It is of further interest to speculate on the possibility that an abscess may result from an amoebic pneumonic process.

1. Armitage, cited by Manson-Behr, P.H., *Manson's Tropical Diseases*, Wm. Wood and Company, 1936. Tenth Edition, Chap. 24, page 520.
2. Ochsner, A. and DeBaKey, M., *Pleuropulmonary Complications of Amebiasis*, *J. Thoracic Surg.*, 5:225, Feb., 1936.

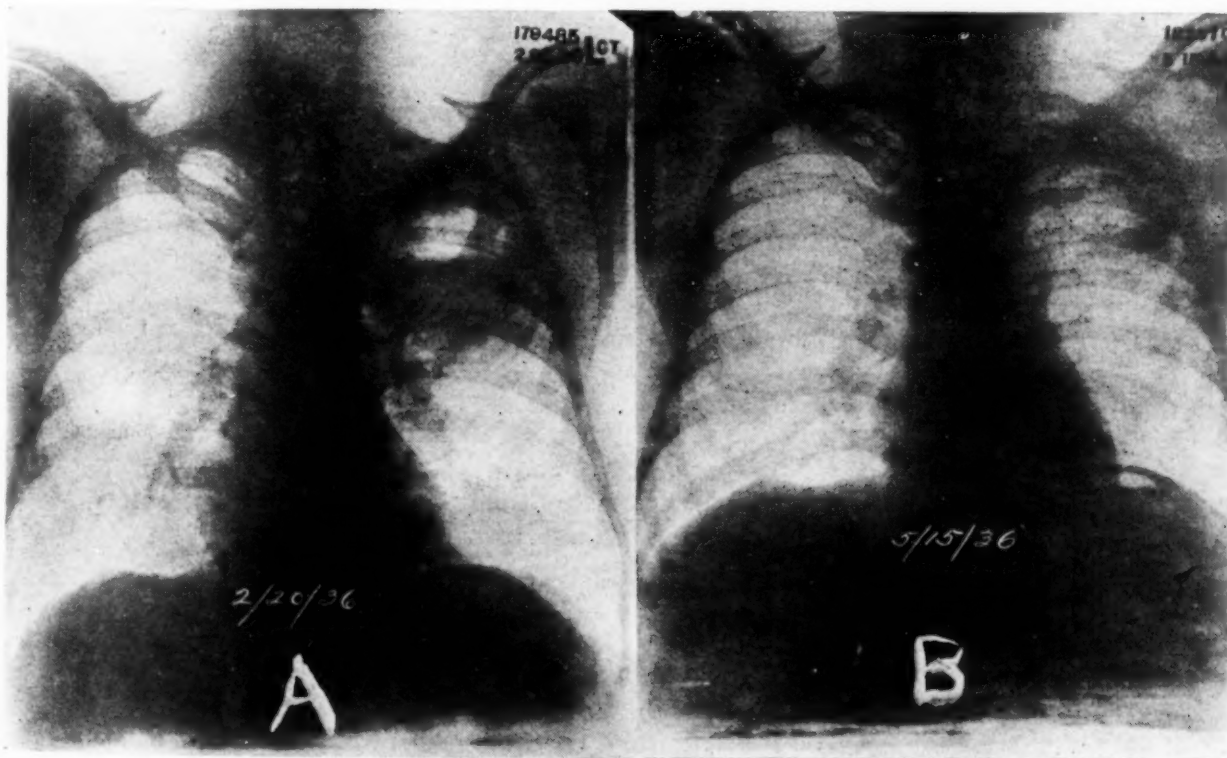


FIG. 1.

A. Roentgenogram demonstrating a large abscess with fluid level in the upper lobe of the left lung; area of pneumonitis surrounding this is quite marked.

B. Three months later an air containing cavity is distinctly visible, but the size of the abscess and inflammatory zone surrounding it have diminished.



## Teaching Methods in Medicine, or How Effective Is Our Teaching?

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HAVING been identified with medical education in one capacity or another for more than a quarter of a century, during which time I had ample opportunity to observe our educational efforts as reflected in the work of our students, interns, house physicians, and, finally, as active practitioners of medicine, in the city as well as in rural communities, I gathered certain impressions on medical education, and as time went on they gradually crystallized into definite form.

In presenting my views on current medical educational problems, I fully realize the vastness of the subject involved, cognizant of the diversity of opinion of eminent medical educators both here and abroad. Above all, I am deeply conscious of my own shortcomings in this attempt.

And, perhaps, you may well ask, with the "cynic of old" what is my motive in all this? And, apologetically, I must answer that I do not possess "the philosopher's magic stone of wisdom." Nor do I wear the "mantle of a Master Critic." Medical education, more specifically here at Marquette, is my sole and only motive.

What can we do to make our teaching most effective? Do nonmedical teachers know anything about teaching that would be valuable to us in our work with medical students? The philosophy of education, as conducted in the public schools and colleges, has been revolutionized during recent years.

The teacher accepts the pupil not as a recipient, but as a reacting agent. The teacher accepts the pupil as the predominant partner in the work of education, and arrives at a result that shall contain a large contribution from the free activity of his mind. The teacher has now become a director of learning. He stimulates and guides the pupil, who learns largely by self-activity. His mission is to teach pupils, not subjects. The idea that education can be imparted has been abandoned.

John Dewey, professor of philosophy in Columbia University, points out that education is not an affair of telling and being told, but is an active and constructive process. The student's understanding and retention of a subject are commonly so much less as a result of listening to lectures than by pursuing some of the various methods of learning in which self-activity is a feature. In other words, if we follow the spirit of the idea that it is the student who is doing the learning, and we, as teachers, are aiding them by guidance, stimulation, etc., the more sound will be our work as teachers of medicine.

There is no formal teacher training for medicine. The average medical teacher is selected for his superior knowledge of his subject, and much less for an equally sound understanding of the methods of teaching. Someone has said that medical education suffers from a "plethora" of authorities on medicine and a "dearth" of teachers.

Most new teachers of medicine adopt methods and procedures which in their experience were effective during their own education. This, of course, is a practical and often efficient method of entering into the practice of medical teaching. Is it not, however, desirable that medical faculties become familiar with the newer philosophy of contemporary education, and utilize whatever part of it may be applicable?

I do not wish to imply that much of our medical teaching is unsuccessful; far from it! Many able physicians have been graduated, many others have become well educated, in spite of the weakness of pedagogy in schools of medicine.

The problem of what is effective teaching includes, of course, the teacher himself. Let us pause a moment and step in the lecture room and see the teacher in action:

Dr. A.—Prosperous, splendid fellow, popular with the students, good story teller; never gives a grade below B; lectures from notes that were good at one time, but now very much in need of vitamin A but not D.

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Dr. B.—A walking encyclopedia of medical facts; does all the talking and most of the thinking for his students; complacently accepts and wears the crown of medical authority; but woe to the student who questions any of his pronunciamientos! (May we label him the "Medical Giant"?)

Dr. C.—Young, faultlessly groomed, well qualified, capable, enthusiastic; suffering from transient attacks of lecture room megalomania, with an educational delusion that in order to make the proper impression on his students, he must refrain from discoursing on the common and ordinary variety of medical practice; but must soar aloft, until he is lost in that nebulous medical stratosphere where medical visibility is low, and difficult to separate fact from speculation.

Finally, Dr. D.—Modest, honest, tolerant, sympathetic, studious always; remembers his own difficulties while a student; has a definite conception of his obligation to the student as well as to the patient; keeps himself informed of the advances in his field, and sees that his teaching has a freshness so stimulating that carries somewhat into the student; rarely gives an A—if so, it means something.

Who can predict the gains that may come in the future, if teachers obtain a sound knowledge of the science of teaching, in addition to that of their knowledge of medicine? Some years ago, an interesting criticism was published by the Commission on Medical Education.

First.—There is overcrowding in the schedule of work throughout the medical course.

Second.—Much of the teaching in science courses, both laboratory and theoretical work, does not contribute to a sufficient understanding of the basic sciences upon which intelligent practice of other medical work depends.

Third.—Too much of the clinical teaching is from the standpoint of the specialist and on rare diseases, and not enough from the standpoint of the needs of most patients.

Fourth.—The divided responsibility for the care of patients, and the impersonal attitude so frequently taken towards patients in the hospital and clinic, handicap the preparations of students for the assumption of individual responsibility required in practice,

and for the large emotional and psychological factors in many illnesses.

If my information is correct, this does not apply to us here at Marquette, except in some minor instances. How effective is our teaching? How well does our "stuff" go across? These are questions that every medical teacher would like answered. It would be presumptuous on my part to offer a definite answer. It may be well, however, to offer some discussions on the subject.

A knowledge of the psychology of learning is important to every teacher. For all practical purposes we may divide these fundamental laws of learning into:

1. Interest or Motivation.
2. Attention.
3. Association or Thinking.
4. Repetition.
5. Success.

Time will not permit to discuss fully all of these items. Let us examine, however, some of the very essential laws and note in what way they affect our work as teachers of medicine.

The Law of Interest or Motivation: Learning is directly effective and efficient in proportion to the interest of the learner. Interest in what is to be learned is so significant in effective learning that it is often wise to defer its study until interest is assured. Interest begets attention; without attention success is unlikely to follow. I think it is safe to say that as teachers, most of us have violated this law only too often. May I quote to you what Dr. Irving S. Cutter, dean and professor of medicine at Northwestern University Medical School, has to say in this relation?

"The stimulus and direction given by a wise teacher are often of far greater importance than the subject matter taught. The skilled surgeon is often a poor teacher, largely because of his lack of training in teaching methods under a real clinical leader. Of a given medical faculty, possibly 5 per cent will have natural teaching ability; a large percentage may, however, become excellent teachers through the application of a few elementary principles of pedagogy."

If Dr. Cutter's statement be deemed true, what steps are being taken to remedy the difficulty?

Some of you may say that experience is

the most important factor in the development of skill in teaching. Let us not forget that experience without insight is an inefficient means of learning anything. It has been said: "Experience is a good teacher; but it charges a high rate of tuition."

**The Law of Association or Thinking:** It is said that every student comes under the influence of the famous Dane, Frederik Grundvig, Denmark's great educator (although the latter's name is unknown to him). Grundvig's theme was simple: Too many books, too much doing, too much writing, too little thinking. "What we learn from books is valuable only when we do something with it. What we do is valuable only when we know why we are doing it." At first thought, this sounds like a revolutionary statement. However, the more one reflects on it, the more illuminating it becomes. How much of Grundvig's philosophy is applicable to us here I leave to your own individual judgment.

**The Law of Repetition:** "The student can absorb and retain only a small portion of his course. Facts as isolated facts, unless correlated, are lost. Teaching in too great detail, to the exclusion of giving a broad conception of the fundamental principles, is educational homicide." Learning inevitably takes place when the student faces problem situations repeated at intervals. It is normal to forget. About 50 per cent is forgotten, or relegated to our subconscious mind, in a few months. The really important facts can be relearned by repetition.

Considerable attention is being given of late to the correlation of the various subjects pertaining to medical education. The graduate in medicine must always remain a student; if not, he will prematurely arrive at that stage of "mental fixation" where progress ceases. It is sad to see so many medical brethren, yes, even some of our bright and promising young graduates, succumb to this insidious affliction. It has been my belief for some time that we, as teachers of the clinical subjects here at Marquette, have not paid enough attention to the correlation of especially the four great cornerstones of medicine: Anatomy, Physiology, Chemistry and Applied Pharmacology.

Anatomy is essentially the foundation of medicine; it is necessary to the understand-

ing of physiology, pathology, medicine and surgery, and at every point should be correlated with those subjects. Only too often do students hear little or nothing of gross anatomy after they leave the anatomical laboratory.

While the formal course of physiology may end with the second year, the teaching and application of physiology to medicine must be continuous and serious, with the teacher of medicine as interpreter of pathologic physiology.

It is needless for me to mention the correlation of that so stimulating, but oh! how often humiliating, subject of pathology. As William Osler so well said, "As is our pathology, so is our practice."

It is my firm conviction that these subjects should be correlated not in the lecture room, but at the bedside, in the operating room, in the dispensary. Strange to say, there are some clinical men who openly advocate placing these in water-tight compartments, unmolested, and there calmly awaiting the day of judgment.

To strengthen my position in this matter, may I quote Dr. Jonathan Campbell Meakins, professor of medicine in McGill University, Montreal. He writes: "It is not the function of the physiologist or of the biochemist to teach so-called pathological physiology or pathological biochemistry. These subjects essentially fall within the realm of clinical medicine; in fact they are medicine—and the staff of a department of medicine, at the present day, which cannot undertake this teaching is not equipped properly."

Just as long as we clinical teachers ignore the correlation of applied pharmacology, its clinical value in the treatment of disease as well as its limitations, just so long will our graduates continue to be gullible victims for the glib pharmaceutical salesman.

**The Law of Success, or, by some called The Law of Effort:** Skillful use of the practice of letting the student note his progress, or success, may result in a continuance or even an increase in his efforts to better the result. A kind word, a sympathetic attitude toward the student who has difficulties, will often yield a handsome educational dividend. A striking example of this we find in the student

*(Continued to page 28)*



## JOHN BROMHAM HAWES, 2nd.

1877 - 1938

IT IS with a sense of infinite loss and a quiet acceptance of the inevitable that we announce the passing of John Bromham Hawes, 2nd., on July 20th.

Dr. Hawes was born at Montclair, New Jersey, July 11, 1877. He graduated from Harvard Medical School in 1903 and a year later began practicing medicine at Boston. This practice he continued for 34 years, truly becoming one of Boston's beloved physicians. Many honors as well as much responsibility came his way. About twenty years ago, he was made the secretary of the State Tuberculosis Commission of Massachusetts. Shortly after, Dr. Hawes was placed in charge of the clinic for non-pulmonary tuberculosis at the Massachusetts General Hospital. He served in both positions with distinction.

At the time of his death, in addition to his extensive private practice, Dr. Hawes held the position as consultant on diseases of the lungs to the U. S. Veterans Bureau; medical director of the Rutland Cottage Sanatorium; and President of the Boston Tuberculosis Association. In connection with the latter, he was instrumental in the growth of the Prendergast Preventorium and in the establishing of the Boston Workshop, a subsidized rehabilitation project for the tuberculous.

Dr. Hawes was a prolific writer both on the subject of his specialty and its relationship to the patient. He pub-

lished a total of six books, the first in 1913 and the last in 1936; and he contributed many scientific papers for numerous medical journals.

He was a member of the American Clinical and Climatological Association, the National Tuberculosis Association, and a Fellow of the American College of Chest Physicians. He was very active in the College and at the last election of the American College of Chest Physicians held at San Francisco in June, Dr. Hawes was elected a Member of the Board of Regents. He served as an Associate Editor of the Journal, Diseases of the Chest, from January, 1936, up until the time of his death.

While these honors were deserved, it is not from them that we draw on the fount of our recollections of Dr. Hawes. Rather, we remember him in the relationship of doctor to patient. Ever gentle, ever thorough, he was imbued with a desire to serve. His credo of practice, as he himself stated was that: "At all times . . . it is important to bear in mind that one is dealing with a human being worried and apprehensive and not with . . . merely a case of tuberculosis."

His life was full. Work and pleasure and the reward of achievement filled it to the brim. He has left behind him a monument of human lives and hopes. Surely, the world profited by his existence.

# Thank You, Doctor!

Thank you for making the Hotel Sir Francis Drake your convention headquarters in San Francisco, and for the real pleasure we found in meeting and serving each of you.

We hope you found this hotel — its appointments and service, its food, its location — entirely to your liking. May fortune bring you back to us soon.

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## Organization News

### College Elects Governors

The following Governors were elected at the annual meeting of the American College of Chest Physicians held at San Francisco, California, June 12th. Sixteen Governors were elected for a term of one year each. Their tenure of office will expire June, 1939. Sixteen Governors were elected for a term of two years; and sixteen Governors were elected for a term of three years.

The Governors will cooperate with the Board of Regents in passing upon applicants for Fellowship in the American College of Chest Physicians and they will assist the committees of College in carrying out the program of the College in their respective states.

Dr. L. O. Davenport, Birmingham, Alabama, 1939.  
 Dr. Chas. S. Kibler, Tucson, Arizona, 1941.  
 Dr. J. D. Riley, State Sanatorium, Arkansas, 1941.  
 Dr. Wm. C. Voorsanger, San Francisco, Cal., 1939.  
 Dr. Charles I. Kaufman, Denver, Colorado, 1941.  
 Dr. David R. Lyman, Wallingford, Conn., 1939.  
 Dr. Lawrence D. Phillips, Marshallton, Del., 1940.  
 Dr. Joseph W. Peabody, Washington, D. C., 1941.  
 Dr. M. Jay Flipse, Miami, Florida, 1941.  
 Dr. Cleveland D. Welchel, Gainesville, Ga., 1939.  
 Dr. O. F. Swindell, Boise, Idaho, 1941.  
 Dr. George Thomas Palmer, Springfield, Ill., 1939.  
 Dr. James H. Stygall, Indianapolis, Indiana, 1940.  
 Dr. John H. Peck, Oakdale, Iowa, 1940.  
 Dr. Forrest L. Loveland, Topeka, Kansas, 1939.  
 Dr. Edward J. Murray, Lexington, Kentucky, 1940.  
 Dr. Morrell W. Miller, New Orleans, La., 1939.  
 Dr. Edward A. Greco, Portland, Maine, 1941.  
 Dr. Wm. A. Bridges, Towson, Maryland, 1941.  
 Dr. Julius G. Kelley, Pocasset, Mass., 1939.  
 Dr. John Alexander, Ann Arbor, Michigan, 1941.  
 Dr. Sidney A. Slater, Worthington, Minn., 1939.  
 Dr. Wesley J. C. Wiemers, Sanatorium, Miss., 1939.  
 Dr. Hyman I. Spector, St. Louis, Missouri, 1939.  
 Dr. Frank I. Terrill, Deer Lodge, Montana, 1940.  
 Dr. John F. Allen, Omaha, Nebraska, 1940.  
 Dr. Robert B. Kerr, Manchester, N. H., 1940.  
 Dr. Byron M. Harman, Verona, New Jersey, 1939.  
 Dr. LeRoy S. Peters, Albuquerque, N. M., 1940.  
 Dr. Edward P. Eglee, New York City, N. Y., 1939.  
 Dr. Karl Schaffle, Asheville, North Carolina, 1941.  
 Dr. Joseph C. Placak, Cleveland, Ohio, 1941.  
 Dr. Robert M. Shepard, Tulsa, Oklahoma, 1940.  
 Dr. James Marr Bisailon, Portland, Oregon, 1940.  
 Dr. Jacob Paul Frantz, Clearfield, Penn., 1940.  
 Dr. U. E. Zambarrano, Providence, R. I., 1940.  
 Dr. William Atmar Smith, Charleston, S. C., 1940.  
 Dr. William S. Rude, Ridgetop, Tennessee, 1939.  
 Dr. Orville E. Egbert, El Paso, Texas, 1941.  
 Dr. Raymond J. Friel, Salt Lake City, Utah, 1939.  
 Dr. Dean B. Cole, Richmond, Virginia, 1941.  
 Dr. Frederick A. Slyfield, Seattle, Wash., 1941.  
 Dr. Walter E. Vest, Huntington, W. V., 1941.  
 Dr. Andrew L. Banyai, Wauwatosa, Wis., 1940.

Dr. William F. Leslie, Honolulu, Hawaii, 1939.  
 Dr. Miguel Canizares, Manila, P. I., 1940.  
 Dr. Jacob Smith, Rio Piedras, Porto Rico, 1940.  
 Dr. Donato G. Alarcon, Mexico City, Mex., 1941.

### Dr. Peers Heads Committee on Sections and Section Work of A. M. A.

Dr. Robert A. Peers, Colfax, California; a Fellow of the American College of Chest Physicians was Chairman of the important committee on Sections and Section Work of the San Francisco meeting of the American Medical Association.

In his report to the House of Delegates Dr. Peers presented for the committee a recommendation that, "To further the attendance at the general scientific meetings and section programs, your reference committee would be happy to endorse any activity of the Council on Scientific Assembly that would discourage independent societies from holding meetings during the sessions of the American Medical Association."

### SOCIETY NEWS

Dr. Arnold S. Anderson, St. Petersburg, Florida; a Fellow of the American College of Chest Physicians, was one of the speakers on a symposium on tuberculosis given under the auspices of the Pinellas County Medical Society, June 3rd.

Dr. Ross E. McPhail, Lakeview, Washington; a Fellow of the American College of Chest Physicians, addressed the Gray's County Medical Society, Elma, Washington on May 18th. The title of his paper was "Indications and Contraindications for Thoracotomy."

Dr. James H. Stygall, Indianapolis, Indiana; Governor of the American College of Chest Physicians for the State of Indiana, addressed the Henry County Medical Society, Newcastle, Indiana. He spoke on "Artificial Pneumothorax in Tuberculosis."

Dr. Louis Clerf, Philadelphia, Pennsylvania; a Fellow of the American College of Chest Physicians, was a guest speaker before the seventy-first annual meeting of the West Virginia State Medical Society held at White Sulphur Springs, July 11-13. Dr. Clerf spoke on "Pulmonary Suppuration."

Dr. John F. Allen, Omaha, Nebraska, a Governor of the American College of Chest Physicians for the State of Nebraska, has been selected as a member of the Tuberculosis Committee of the Nebraska State Medical Society. His term of office will expire in 1944.

(Continued to page 28)

# THORACIC INSTRUMENTS

We make and illustrate what we believe to be a complete assortment of instruments designed and used by the leading thoracic surgeons, including those for lobectomy, phrenicectomy, thoracoplasty, thoracoscopy, pneumolysis, and kindred techniques.

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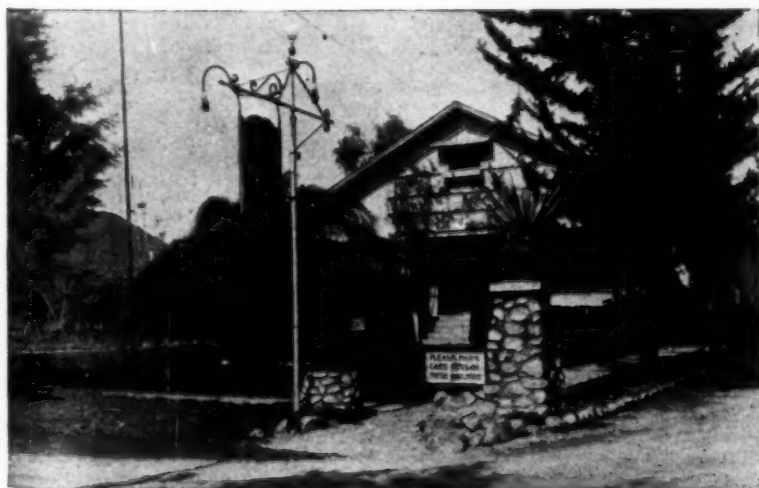
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C. E. ATKINSON, M.D.  
MEDICAL DIRECTOR



## ORGANIZATION NEWS (Continued from page 26).

Dr. R. B. Homan, Sr., El Paso, Texas; a Fellow of the American College of Chest Physicians, was appointed Chairman of the Tuberculosis Committee of the Texas State Medical Society.

*El Paso Fellows Meet*

A meeting of the El Paso Fellows of the American College of Chest Physicians was held July 15th at the Hilton Hotel, El Paso, Texas. Drs. C. M. Hendricks and A. D. Long gave a report of the Fourth Annual Meeting of the College held at San Francisco, June 12th. Dr. R. B. Homan, Sr. outlined his plans for the program of the Tuberculosis Committee of the Texas State Medical Society.

Those present were Drs. Orville E. Egbert, newly elected Governor of the College for the State of Texas, R. B. Homan, Sr., R. B. Homan, Jr., C. M. Hendricks, J. W. Laws, and A. D. Long.

*Founder of the Stony Wold Sanatorium Succumbs*

Mrs. Elizabeth Wilmot Newcomb, founder and first president of the Stony Wold Sanatorium, Lake Kushaqua, New York, died May 30th, at the age of 78. Mrs. Newcomb was instrumental

in raising funds to build a Cottage at the Trudeau Sanatorium, Saranac Lake, New York; but on the advice of the late Dr. Edward L. Trudeau she purchased and remodelled as a sanatorium an old country hotel at Lake Kushaqua. It was incorporated as the Stony Wold Sanatorium in 1901 and it has been functioning ever since as a sanatorium for girls. Dr. Harvey B. Powers is the medical director. Several of the Fellows of the American College of Chest Physicians had at one time or another served on the staff of the Stony Wold Sanatorium.

*State Tuberculosis Sanatorium Planned for Utah*

Eber F. Piers, Ogden architect, has submitted plans for the building of a State Tuberculosis Sanatorium in Utah. The plans have met with the final approval of the Board and construction will start during the summer. The plan provides for a 100 bed sanatorium, and the buildings will be of frame construction with a concrete foundation. It is hoped to have the sanatorium completed by the end of this year.

## TEACHING METHODS IN MEDICINE (Continued from page 24).

life of Sir James Mackenzie, father of our present day conception of cardiology.

Dr. Mackenzie had difficulty in memorizing, and in his preclinical years found it difficult to pass tests when pure memory was required. He became discouraged; considered himself a dunce and ready to give up. Dr. Brown, associate professor of anatomy, came in contact with him in the dissecting room; noticed and sensed his difficulties. Through his encouragement and guidance, Mackenzie successfully finished his first two years' studies. When he got into the clinical branches, his troubles were over. His career as a physician, investigator and writer forms one of the brightest chapters in medicine of the present era.

I want to make a suggestion to the Executive Faculty that, if in their opinion it is wise,

during this coming college year, they invite some noted educators who will lecture to us on applied pedagogy and techniques of teaching—one of these to be a nonmedical man.

In appreciation of your kind forbearance, may I leave with you as a gift, for future meditation, a quotation, which I slightly paraphrased, taken from that charming poem, "To a Louse," by Scotland's favorite poet, Robert Burns:

"O wad same power the giftie gie us,  
To se oursels as *students* see us:  
It wad frae mony a blunder frae us."

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